

Wetland Mitigation Monitoring Report



Project Site:

FAP 857 (IL 14), Harrisburg Site 2
Saline County, Illinois

IDOT Sequence Number: 547



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Project Summary

A fifth year monitoring survey was conducted at the FAP 857 (IL 14), Harrisburg Site 2 Wetland Mitigation Site in Saline County, Illinois. Introductory information, goals, objectives, performance criteria, methods, and results are presented in this report, followed by discussion and recommendations. Wetland determination results and a printout of the digital orthoquad (DOQ) showing wetland boundaries and sampling points are also included. Wetland determination forms can be found in Appendix A, species lists in Appendix B, figures in Appendix C, and photographs in Appendix D.

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Table of Contents

Project Summary	2
Introduction.....	4
Goals, Objectives and Performance Standards	4
Methods	5
Results	7
Stream Description and Characterizations.....	9
Discussion.....	9
Literature Cited	11
APPENDIX A	13
Wetland Determination Forms.....	14
APPENDIX B	26
Plant Species Lists.....	27
APPENDIX C	3
Figure 1 – Project Location Map.....	3
Figure 2 – Mitigation Monitoring Map	3
Figure 3 – ISGS 2012 Wetland Hydrology Map.....	3
APPENDIX D	3
Photographs of Wetland Mitigation Site	

Cover Photo: Water control structure in the drainageway that bisects the site.

Wetland Mitigation Monitoring Report

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Saline County, Illinois

Introduction

Fifth-year monitoring was conducted on September 25-26, 2012 at the FAP 857 (IL 14), Harrisburg Site 2 Wetland Mitigation Site. This project is located north of IL 13 on the western edge of the city of Harrisburg, IL. The project site comprises approximately 35 acres. The legal description of its location is Section 17 T. 9S, R. 6E, Saline County, Illinois. The site lies within the Saline River drainage basin (Hydrologic Unit Code 05140204). The site was constructed and planted in 2008 with pecan (*Carya Illinoensis*), Shumard oak (*Quercus shumardii*), swamp white oak (*Q.s bicolor*), pin oak (*Q. palustris*), and a wetland grass mixture. Also present at the site is white oak (*Q. alba*) which was not on the plant list. Shumard oaks were counted and grouped together with pin oaks because of the difficulty in accurately determining early stage Shumard oaks from pin oaks. An undetermined amount of additional trees was planted in 2009. The National Wetlands Inventory did not map any wetlands within the site. Numerous floodplain soils were mapped at the site; but most, if not all, of the soils are disturbed and compact due to site preparation/construction.

This report discusses the goals, objectives, and performance criteria for the mitigation project, the methods used for monitoring the site, monitoring results, and discussion and recommendations based on the results. Methods and results are discussed by performance criterion for each goal.

Goals, Objectives, and Performance Criteria

Goals, objectives, and performance criteria for the FAP 857 (IL 14), Harrisburg Site 2 Wetland Mitigation Site follow those specified in the Wetland Compensation Plan [Illinois Department of Transportation (IDOT) 2006] developed for this site. Performance criteria are based on those specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Illinois Wetland Restoration and Creation Guide* (Admiraal et al. 1997), and in *Guidelines for Developing Mitigation Proposals* (USACE 1993). The project goal should be attained by the end of the 5-year monitoring period. Goals, objectives, and performance criteria are listed below.

Project Goal #1: The created wetland mitigation area should be determined to be jurisdictional wetland as defined by the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* [U.S. Army Corps of Engineers (USACE) 2010].

Objective: The created wetland should consist of approximately 10.2 acres (4.1 ha) of wet

floodplain forest. It should satisfy the three criteria of the federal wetland definition: presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology.

Performance criteria:

- a. Predominance of hydrophytic vegetation: More than 50% of the dominant plant species must be hydrophytic.
- b. Presence of hydric soils: Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist at the site.
- c. Presence of wetland hydrology: Using the Midwest Region Supplement (USACE 2010) standard, requires 14 or more consecutive days of flooding or ponding (depths less than 2 m), or a water table 12 in. (30 cm) or less below the soil surface during the growing season.

Project Goal #2: The forested wetland plant community should meet standards for survival of planted species and overall floristic composition.

Objective: The wetland restoration should compensate in-kind for loss of forested wetlands. The wetland compensation should be composed of vegetation characteristic of forested wetlands. Planted trees should dominate the site along with native non-weedy vegetation.

Performance Criteria:

- a. Tree Survival Rate: There should be a 90% survival rate of the planted trees by the end of a five-year monitoring period. The wetland mitigation-monitoring plan originally called for a total of 715 trees for the whole project but more trees (an undetermined number) were planted in 2009. There should be at least 644 (90% survival rate) live planted trees each year.
- b. Herbaceous Cover: Including herbaceous cover, no single species should constitute more than 25% of the surviving species.
- c. Native Vegetation: Native vegetation, excluding weedy species and exotics such as common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), cattails (*Typha* spp.), and purple loosestrife (*Lythrum salicaria*), should cover at least 70% of the compensatory mitigation site.

Methods

Project goal 1

- a. Predominance of hydrophytic vegetation

The method for determining dominant vegetation at a wetland site is described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010) and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989). It is based on aerial coverage estimates for individual plant species. Each of the dominant plant species is then assigned its wetland indicator status rating (Lichvar and Kartesz 2009). Any plant rated facultative or wetter (FAC, FACW, or OBL) is considered a hydrophyte. A predominance of

wetland vegetation in the plant community exists if more than 50% of the dominant species present are hydrophytic. Predominance of hydrophytic vegetation was determined at the sampling point level as part of the routine wetland determination procedure.

This mitigation site was divided into six sites based on plant community boundaries this year; sites 1 and 4 are non-wetland, sites 2, 3, 5, and 6 are mapped as wetlands.

b. Presence of hydric soils

Soil was sampled in order to monitor hydric soil development. Soil profile morphology including horizon color, texture, and structure was described at various points throughout the site. Additionally, the presence, type, size, and abundance of redoximorphic features were noted. Hydric soils may develop slowly, and characteristics may not be apparent during the first several years after project construction. In the absence of hydric soil indicators at the end of the five-year monitoring period, hydrologic data could be used as corroborative evidence that conditions favorable for hydric soil formation persist at the site.

c. Presence of wetland hydrology

Illinois State Geological Survey (ISGS) personnel have installed a variety of hydrologic monitoring devices at the site and will be responsible for monitoring site hydrology.

Project goal 2

a. Tree Survival Rate

In order to create floodplain forest, tree saplings were to be planted at the compensation site as specified in the Wetland Compensation Plan (IDOT 2006). Original plantings took place in the spring of 2008. Kingnut hickory (*Carya laciniosa*) was never planted and has since been removed from the site plans. It is not known for sure the specific planting numbers for each individual tree species since one species was totally eliminated and additional trees of the remaining species were added. Also an undetermined amount of trees were added later in 2009. Table 1 below shows the tree species planted at the site.

Table 1. Tree species planted at the FAP 857 (IL 14), Harrisburg Site 2

Scientific Name	Common Name
<i>Carya illinoiesis</i>	Pecan
<i>Quercus alba</i>	White Oak
<i>Quercus bicolor</i>	Swamp White Oak
<i>Quercus michauxii</i>	Swamp Chestnut Oak
<i>Quercus palustris/shumardii</i>	Pin/Shumard Oak

All of the trees were to be 4' tall and furnished in a 3 gallon container. Survivorship of the planted trees was determined through a census of the site.

b. Herbaceous Cover

This first paragraph should be a sentence or two describing methodology for this criteria. The second paragraph can stay as is – we need to put it somewhere.

A complete list of plant species present was compiled. Each native plant species was assigned a “coefficient of conservatism” (C) (Taft et al. 1997), a subjective rating of species fidelity to undegraded natural communities, ranging from zero to ten. Conservative species - those more likely to be found in “pristine” natural areas - were assigned high numbers, whereas non-conservative species - those that occur in anthropogenically disturbed areas - were given lower numbers. Non-native species and those not identifiable to species level were not assigned a rating. The Floristic Quality Index (FQI) is computed as $FQI = (\text{mean } C) \times (\sqrt{N})$, where mean C is the mean coefficient of conservatism for all native plant species at a site and N is the total number of native plant species at the site. In very general terms, higher FQI values for plant communities indicate more similarity to “pristine” natural areas, as compared to those communities with lower FQI values. Botanical nomenclature follows *Vascular Flora of Illinois* (Mohlenbrock 2002).

c. Native vegetation

Plant species dominance was determined as in project goal 1a. “Predominance of hydrophytic vegetation.” Need another line or 2 about how this criterion was actually determined; also need to explain what is meant by native and non-weedy.

Results

Project goal 1

a. Predominance of hydrophytic vegetation

Sites 2, 3, 5, and 6 met the hydrophytic vegetation criterion. Dominant plant species for all these sites are found at the top of the plant lists in bold in Appendix B.

b. Occurrence of hydric soils

Soils were examined throughout the project site. The whole mitigation monitoring site has been excavated to some extent to create a greater surface area for floodwater retention, resulting in potentially more wetlands. The whole site is heavily compacted and soil probing is problematic no matter if the site is wet or dry. The soils in this area have been impacted to the extent that they will be described as scraped and not given a soil series name. The soils at all of the sites appear to satisfy the hydric soil criterion. Brief soil descriptions can be found in the wetland forms in Appendix A.

c. Presence of Wetland Hydrology

The total area that satisfied the wetland hydrology criterion for 14 or more consecutive days during the 2012 growing season was 7.24 ha (17.88 ac). For comparison, the ISGS estimated that the area that satisfied the wetland hydrology criterion for more than 5% of the 2012 growing season was 2.63 ha (6.49 ac), and the total area that satisfied the wetland hydrology criterion for more than 12.5% of the 2012 growing season was 1.2 ha (2.51 ac) (Miner et al.

2012). More detailed hydrologic information can be found in the ISGS *Annual Report for Active IDOT Wetland Mitigation and Hydrologic Monitoring Sites* (Ibid.).

Project goal 2

a. Tree Survival Rate:

Results of the planted tree count are shown in Table 2. Tree survival appeared to be low this year. Only 600 out of 715+ trees were found alive. This represents an 84% tree survival rate at this site. The Wetland Compensation Plan (IDOT 2006) calls for 90% survival rate or at least 644 trees to be alive. Thus, this site does not meet this performance criterion.

Table 2. Number of trees counted, September 2012.

Scientific Name	Common Name	Trees counted
<i>Carya illinoensis</i>	Pecan	147
<i>Quercus alba</i>	White Oak	14
<i>Quercus bicolor</i>	Swamp White Oak	197
<i>Quercus michauxii</i>	Swamp Chestnut Oak	8
<i>Quercus palustris/shumardii</i>	Pin/Shumard Oak	234
Total		600

b. Herbaceous Cover

As stated previously, no single species should constitute more than 25% cover at the site. Visual observation determined that all sites had at least one species constitute more than 25% cover as Table 3 shows below. Thus, this criterion is not met.

Table 3. Site vegetation > 25% cover, September 2012

Site	Scientific Name –Species constituting more than 25% cover
1	<i>Solidago canadensis</i>
2	<i>Bidens aristosa</i>
3	<i>Juncus effusus</i> var. <i>solutus</i>
4	<i>Phragmites australis</i>
5	<i>Panicum virgatum</i>
6	<i>Phragmites australis</i> , <i>Typha angustifolia</i>

The calculated floristic quality index (FQI) and mean coefficient of conservatism (mCv) for each of the wetland sites is shown below in Table 4. The Harrisburg Site 2 had a collective FQI of 13.9 and mCv of 2.7 (not including any non-wetland areas). As a whole, the Harrisburg Site 2 can be considered to have a fair floristic quality. As Table 4 shows below, all sites are considered to have fair floristic quality except for site 2 (which despite it having a high floristic quality and may be considered an environmental asset, it is significantly degraded due to scraping and compacted soils).

Table 4. FQI and mCv values for each wetland site at the Harrisburg Site 2, September 2012.

Site	FQI	mCv
2	21.9	3.0
3	13.1	2.6
5	15.0	2.4
6	19.5	2.6
Total	13.9	2.7

c. Native Vegetation

Sites 2, 3, and 5 met the native species composition goal of greater than 70%.

Stream Description and Characterization

One main drainageway is present within the monitoring site assessment area. This drainageway, an unnamed tributary to the West Harrisburg Ditch, flows from the southwest corner of the project area across the middle of the site and exits at the east edge of the project toward Harrisburg Site 1. This unnamed tributary, between 0.6 and 2.4 m (2 and 8 ft) wide, is straightened and channelized. Water was 0.5 m (1.5 ft) deep in areas (mainly near the water control structure) and shallower in most other areas. There was no water flowing at the time of the field investigation. Drainageway substrate consisted of a silt-clay composition. This unnamed tributary drains into the Middle Fork of the Saline River approximately 5.6 km (3.5 mi) to the northeast. The Middle Fork of the Saline River then empties into the Saline River, which flows into the Ohio River. The watershed area above the monitoring site is approximately 2.59 km² (1 mi²). The USGS hydrologic unit code for this basin is 05140204 (Saline River).

Discussion

Project Goal 1 (Jurisdictional Wetland)

This wetland mitigation monitoring site is located on a floodplain just west of Harrisburg, IL. A mitigation site assessment was performed in 2006 (Marcum et al.). The following community types existed at that time: non-native grassland, native grassland (prairie plantings), shrubland, mesic floodplain forest, marsh, wet meadow, and wet shrubland. After clearing and reworking some of the site, the following community types are now present: native grassland (5), marsh (6), wet meadows (2, 3), and forbland (1). Most, if not all, of the 35 acres of the site had either hydric soils or hydric soil features caused by the site preparation and soil disturbance. The total area that satisfied the wetland hydrology criteria for 14 or more consecutive days during the 2012 growing season was 17.9 ac (51% of site). By comparison, about 6.5 ac out of 35 acres (19%) of the site had at least 5% wetland hydrology and about 2.5 out of 35 acres (7%) of this site had 12.5% or greater wetland hydrology during the growing season. Wetland hydrology acreage was lower this year due to the drought that occurred during most of the growing

season. Dominant hydrophytic vegetation occurred on approximately 17 out of 35 acres (49%) of the site. We calculated that this site had 11.9 acres of wetland this year (2012). Project Goal 1 consists of obtaining 10.2 wetland acres at this site. Thus, this site meets Project Goal 1 for wetland acreage needed. Previously, total wetland acreage found after the initial site investigation in 2006 was 1.962 ha (4.852 acre) (Marcum et al.). Total wetland acreage found after the first year of monitoring (Keene et al. 2008) this site was 0.704 ha (1.744 acres). Total wetland acreage found after the second year (Keene et al. 2009) of monitoring was 9.7 ha (24 acres). Total wetland acreage found after the third year (Keene et al. 2010) of monitoring was 7.2 ha (17.6 acres). Total wetland acreage found after the fourth year (Keene et al. 2011) of monitoring was 7.4 ha (18.4 acres). Water control structures were installed in the drainageway in 2008 and became operational in 2009. These structures helped promote an increase in wetland acreage after the first year of monitoring. This increased the overflow onto the site and ensured wetness on this site even during a drier than normal year.

Project Goal 2 (Tree Density and Floristic Composition):

Planted sapling/shrub stage trees overall survival count was 600. This marks a decrease of 67 trees at this site from the 2011 report of 667 trees (Keene et al.). This site did not meet its criterion of at least 644 trees. More trees will need to be planted. Also, tree growth in general seems minimal to slow for most tree species again this past year. Soil compaction along with droughty conditions this year may be the most important factors limiting tree growth and survivorship.

No single species should constitute more than 25% of the site. Visual observation determined that all sites had at least one species constitute more than 25% cover. Thus, this criterion is not met. More native species should be planted at all sites. Native, non-weedy vegetation should cover at least 70% of the site. Sites 2, 3, and 5 meet the native species composition criterion of greater than 70%.

It appears at the time of our field investigation this year that *Phragmites australis* continues to be a problem. There exists a healthy population of *P. australis* occurring just south of the old railroad embankment along the north-northwest border of the site and also along the drainageway that bisects the mitigation site. In Site 6, *P. australis* and *Typha* spp. still occur and should be treated. Continual mowing and spraying is needed to control these weedy species before they spread to the rest of the site. Also management techniques such as burning followed by disking and then flooding the site may help reduce the coverage of these species.

Literature Cited

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APPENDIX A**Wetland Determination Forms**

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 1A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex
 Slope (%): < 2 Lat: 37.73800 Long: -88.56870 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Banlic sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>No</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>No</u>	Is the Sampled Area within a Wetland? <u>No</u>
Remarks: Community type is forbland. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum	(Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
		<u>0</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
Sapling/Shrub Stratum	(Plot size: 15 ft radius)				
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
		<u>0</u>	= Total Cover		Hydrophytic Vegetation Indicators <input type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum	(Plot size: 5 ft radius)				
1. <u>Solidago canadensis</u>		30	Yes	FACU	
2. <u>Andropogon virginicus</u>		25	Yes	FACU	
3. <u>Eupatorium serotinum</u>		4	No	FAC	
4. <u>Erigeron annuus</u>		3	No	FACU	
5. <u>Liquidambar styraciflua</u>		3	No	FACW	
6. <u>Calystegia sepium</u>		2	No	FAC	
7. <u>Rubus allegheniensis</u>		2	No	FACU	
8. <u>Setaria glauca</u>		2	No	FAC	
9. <u>Bidens aristosa</u>		1	No	FACW	
10. <u>Juniperus virginiana</u>		1	No	FACU	
		<u>73</u>	= Total Cover		
Woody Vine Stratum	(Plot size: 30 ft radius)				
1. _____					
2. _____					
		<u>0</u>	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)					

SOILSampling Point: 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 4/2	95	7.5YR 4/6	5	c	m	SIL	
5 - 12	10YR 5/1	90	7.5YR 5/8	10	c	m	SIL	
12 - 20	N 4/	90	7.5YR 5/8	10	c	m	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
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Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width:48%;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div style="width:48%;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		Secondary Indicators (minimum of two is required) <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) </div>
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Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>No</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Well data collected substantiates that most of this site did not have 14 days or more of wetland hydrology.

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 2A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): < 1 Lat: 37.73745 Long: -88.56940 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Bonnie sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is wet meadow. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum	(Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
		0	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
Sapling/Shrub Stratum	(Plot size: 15 ft radius)				
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
		0	= Total Cover		Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum	(Plot size: 5 ft radius)				
1. <i>Bidens aristosa</i>		40	Yes	FACW	
2. <i>Dichanthelium acuminatum</i>		10	No	FAC	
3. <i>Andropogon virginicus</i>		5	No	FACU	
4. <i>Solidago canadensis</i>		5	No	FACU	
5. <i>Campsis radicans</i>		3	No	FACU	
6. <i>Eupatorium serotinum</i>		2	No	FAC	
7. <i>Fraxinus lanceolata</i>		1	No	FACW	
8. _____					
9. _____					
10. _____					
		66	= Total Cover		Hydrophytic Vegetation Present? <u>Yes</u>
Woody Vine Stratum	(Plot size: 30 ft radius)				
1. _____					
2. _____					
		0	= Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)					

SOILSampling Point: 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 5/2	98	7.5YR 4/6	2	c	m	SIL	
4 - 15	10YR 5/1	90	7.5YR 4/6	5	c	m	SIL	
4 - 15			7.5YR 5/8	5	c	m		
15 - 20	2.5Y 5/1	88	7.5YR 4/6	2	c	m	SIL	
15 - 20			7.5YR 5/8	10	c	m		

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators				
Primary Indicators (minimum of one is required: check all that apply) <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) </td> </tr> </table>	<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	(minimum of two is required) <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) </td> <td style="width: 50%;"></td> </tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)					
Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Well data reported by ISGS found that this area satisfied the wetland hydrology criteria for 14 or more consecutive days during the growing season.					
Remarks:					

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 3A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex
 Slope (%): < 1 Lat: 37.73529 Long: -88.57138 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Bonnie sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is wet meadow. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum	(Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		0	= Total Cover	
Sapling/Shrub Stratum	(Plot size: 15 ft radius)			
1. <i>Carya illinoensis</i>		1	No	FACW
2. <i>Ulmus americana</i>		1	No	FACW
3.				
4.				
5.				
		2	= Total Cover	
Herb Stratum	(Plot size: 5 ft radius)			
1. <i>Juncus effusus</i> var. <i>solutus</i>		35	Yes	OBL
2. <i>Dichanthelium clandestinum</i>		15	Yes	FACW
3. <i>Euthamia graminifolia</i>		10	No	FACW
4. <i>Dichanthelium acuminatum</i>		8	No	FAC
5. <i>Juncus secundus</i>		4	No	FAC
6. <i>Acer rubrum</i>		2	No	FAC
7. <i>Ambrosia artemisiifolia</i>		2	No	FACU
8. <i>Campsis radicans</i>		2	No	FACU
9. <i>Ulmus americana</i>		2	No	FACW
10. <i>Fraxinus lanceolata</i>		1	No	FACW
		81	= Total Cover	
Woody Vine Stratum	(Plot size: 30 ft radius)			
1.				
2.				
		0	= Total Cover	

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across All Strata: _____ (B)
 Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
☒ 1-Rapid Test for Hydrophytic Vegetation
☐ 2-Dominance Test is >50%
☐ 3-Prevalence Index is < or =3.0¹
☐ 4-Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes

Remarks: (Include photo numbers here or on a separate sheet.)

SOILSampling Point: 3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 7	10YR 5/2	93	7.5YR 5/8	5	c	m	SIL	
0 - 7			7.5YR 4/6	2	c	m		
7 - 15	2.5Y 5/1	91	7.5YR 5/8	5	c	m	SIL	
7 - 15			7.5YR 4/6	2	c	m		
7 - 15			10YR 5/6	2	c	m		
15 - 25	2.5Y 5/1	85	7.5YR 5/8	15	c	m	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)

☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators
Primary Indicators (minimum of one is required: check all that apply)	(minimum of two is required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Well data reported by ISGS found that this area satisfied the wetland hydrology criteria for 14 or more consecutive days during the growing season.

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 4A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): < 1 Lat: 37.73363 Long: -88.57308 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Belknap sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>No</u>	Is the Sampled Area within a Wetland? <u>No</u>
Remarks: Community type is non-native grassland. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1. <u>Campsis radicans</u>	3	No	FACU	
2. _____				
3. _____				
4. _____				
<u>3</u> = Total Cover				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: 5 ft radius)				
1. <u>Phragmites australis</u>	70	Yes	FACW	
2. <u>Campsis radicans</u>	4	No	FACU	
3. <u>Calystegia sepium</u>	3	No	FAC	
4. <u>Acer rubrum</u>	1	No	FAC	
<u>78</u> = Total Cover				Hydrophytic Vegetation Present? <u>Yes</u>
Woody Vine Stratum (Plot size: 30 ft radius)				
1. _____				
2. _____				
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOILSampling Point: 4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 5/1	95	7.5YR 4/6	5	c	m	SIL	
6 - 12	10YR 4/1	98	7.5YR 5/8	2	c	m	SIL	
12 - 20	10YR 5/1	90	7.5YR 4/6	10	c	m	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
---	---

Indicators for Problematic Hydric Soils³:
☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div style="width: 48%;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		Secondary Indicators (minimum of two is required) <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) </div> </div>
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Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>No</u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: While some secondary wetland hydrology field indicators were present, this site lacked supporting wetland hydrology gauge or well data.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 5A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): < 1 Lat: 37.73539 Long: -88.56987 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Belknap sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is native grassland planting. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: 30 ft radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
1. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____				Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
3. _____				
4. _____				
5. _____				
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft radius)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
	<u>0</u>	= Total Cover		UPL species _____ x 5 = _____
Herb Stratum (Plot size: 5 ft radius)				Column Totals _____ (A) _____ (B)
1. <i>Panicum virgatum</i>	95	Yes	FAC	Prevalence Index =B/A = _____
2. <i>Ipomoea lacunosa</i>	1	No	FACW	
3. <i>Prunella vulgaris var. elongata</i>	1	No	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
Woody Vine Stratum (Plot size: 30 ft radius)				Hydrophytic Vegetation Indicators
1. _____				<input type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation
2. _____				<input checked="" type="checkbox"/> 2-Dominance Test is >50%
	<u>97</u>	= Total Cover		<input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹
				<input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? <u>Yes</u>
Remarks: (Include photo numbers here or on a separate sheet.)				

SOILSampling Point: 5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹			Loc ²
0 - 6	10YR 5/1	98	7.5YR 4/6	2	c	m	SIL	
6 - 12	10YR 4/1	96	7.5YR 5/8	2	c	m	SIL	
6 - 12			7.5YR 3/4	2	c	m		
12 - 20	2.5Y 5/1	88	7.5YR 5/8	10	c	m	SIL	
12 - 20			7.5YR 4/6	2	c	m		

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)	

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators
Primary Indicators (minimum of one is required: check all that apply)	(minimum of two is required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Well data reported by ISGS found that this area satisfied the wetland hydrology criteria for 14 or more consecutive days during the growing season.

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: FAP 857 (IL 14), (Harrisburg 2) City/County: Saline Sampling Date: 9/26/2012
 Applicant/Owner: IDOT District 9 State: IL Sampling Point 6A
 Investigator(s): Keene, Marcum, Beas Section, Township, Range: Sec 17, T9S, R6E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): < 1 Lat: 37.73697 Long: -88.56735 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped Banlic sil, classified as Undetermined NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is marsh. This area of the state is experiencing a moderate drought at the time of the field investigation.	

VEGETATION -Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
(Plot size: 30 ft radius)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	0	= Total Cover		
Sapling/Shrub Stratum				
(Plot size: 15 ft radius)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	0	= Total Cover		
Herb Stratum				
(Plot size: 5 ft radius)				
1. <i>Phragmites australis</i>	85	Yes	FACW	
2. <i>Aster lanceolatus</i>	5	No	FAC	
3. <i>Juncus effusus var. solutus</i>	2	No	OBL	
4. <i>Leersia oryzoides</i>	2	No	OBL	
5. <i>Carex tribuloides</i>	1	No	OBL	
6. <i>Phyla lanceolata</i>	1	No	OBL	
7. _____				
8. _____				
9. _____				
10. _____				
	96	= Total Cover		
Woody Vine Stratum				
(Plot size: 30 ft radius)				
1. _____				
2. _____				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: _____ (A)
 Total Number of Dominant Species Across All Strata: _____ (B)
 Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

Hydrophytic Vegetation Indicators
☒ 1-Rapid Test for Hydrophytic Vegetation
☐ 2-Dominance Test is >50%
☐ 3-Prevalence Index is < or =3.0¹
☐ 4-Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes

Remarks: (Include photo numbers here or on a separate sheet.)

SOILSampling Point: 6A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 3	10YR 5/1	96	7.5YR 4/6	2	c	m	SICL	
0 - 3			7.5YR 5/8	2	c	m		
3 - 6	10YR 4/1	90	7.5YR 4/6	5	c	m	SICL	
3 - 6			7.5YR 5/8	5	c	m		
6 - 12	N 6/	85	10YR 5/3	10	c	m	SICL	
6 - 12			7.5YR 5/6	5	c	m		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)

☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators
Primary Indicators (minimum of one is required: check all that apply)	(minimum of two is required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>Yes</u> Depth (inches): <u>11</u> Saturation Present? <u>Yes</u> Depth (inches): <u>11</u> (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Well data reported by ISGS found that this area satisfied the wetland hydrology criteria for 14 or more consecutive days during the growing season.

Remarks:

APPENDIX B**Wetland Plant Species Lists**

Project Title: FAP 857 (IL 14), (Harrisburg 2)

Site 2, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Bidens aristosa</i>	swamp marigold	H	FACW	1
<i>Acalypha rhomboidea</i>	three-seeded mercury	H	FACU	0
<i>Acalypha virginica</i>	three-seeded mercury	H	FACU	2
<i>Acer rubrum</i>	red maple	H	FAC	5
<i>Agalinis fasciculata</i>	false foxglove	H	FAC	6
<i>Agrostis gigantea</i>	red top	H	FACW	0
<i>Ambrosia artemisiifolia</i>	common ragweed	H	FACU	0
<i>Andropogon virginicus</i>	broom sedge	H	FACU	1
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Aster lanceolatus</i>	panicked aster	H	FAC	3
<i>Boltonia asteroides</i>	false aster	H	OBL	5
<i>Campsis radicans</i>	trumpet creeper	HS	FACU	2
<i>Carex frankii</i>	bristly cattail sedge	H	OBL	4
<i>Carex vulpinoidea</i>	brown fox sedge	H	FACW	3
<i>Carya illinoensis</i>	pecan	S	FACW	6
<i>Catalpa speciosa</i>	cigar tree	HS	FACU	5
<i>Dichanthelium acuminatum</i>	panic grass	H	FAC	0
<i>Dichanthelium clandestinum</i>	deer-tongue grass	H	FACW	4
<i>Diodia virginiana</i>	large buttonweed	H	FACW	4
<i>Diospyros virginiana</i>	persimmon	HS	FAC	2
<i>Echinochloa muricata</i>	spiny barnyard grass	H	OBL	0
<i>Eleocharis acicularis</i>	needle spike rush	H	OBL	3
<i>Eleocharis ovata</i> var. <i>obtus</i>	blunt spike rush	H	OBL	2
<i>Eupatorium perfoliatum</i>	common boneset	H	OBL	4
<i>Eupatorium serotinum</i>	late boneset	H	FAC	1
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	H	FACW	3
<i>Fraxinus lanceolata</i>	green ash	HS	FACW	2
<i>Ipomoea hederacea</i> *	ivy-leaved morning glory	H	FAC	-
<i>Ipomoea lacunosa</i>	small morning glory	H	FACW	1
<i>Iva annua</i>	marsh elder	H	FAC	0
<i>Juncus brachycarpus</i>	short-fruited rush	H	FACW	5
<i>Juncus effusus</i> var. <i>solutus</i>	common rush	H	OBL	4
<i>Juncus interior</i>	inland rush	H	FAC	3
<i>Juncus secundus</i>	side-flowering rush	H	FAC	6
<i>Lespedeza cuneata</i> *	silky bush clover	H	UPL	-
<i>Liquidambar styraciflua</i>	sweet gum	HS	FACW	6
<i>Ludwigia palustris</i> var. <i>americana</i>	marsh purslane	H	OBL	4
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Oenothera biennis</i>	common evening primrose	H	FACU	1
<i>Paspalum laeve</i>	smooth lens grass	H	FACW	2
<i>Persicaria pensylvanica</i>	pinkweed	H	FACW	1
<i>Persicaria punctata</i>	smartweed	H	OBL	3
<i>Phragmites australis</i> *	common reed	H	FACW	-
<i>Phyla lanceolata</i>	fog fruit	H	OBL	1

Species list continued on next page

Site 2, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Populus deltoides</i>	eastern cottonwood	S	FAC	2
<i>Potentilla simplex</i>	common cinquefoil	H	FACU	3
<i>Prunella vulgaris</i> var. <i>elongata</i>	self-heal	H	FAC	1
<i>Pseudognaphalium obtusifolium</i>	old-field balsam	H	UPL	2
<i>Quercus alba</i>	white oak	S	FACU	5
<i>Quercus bicolor</i>	swamp white oak	S	FACW	7
<i>Quercus michauxii</i>	basket oak	S	FACW	7
<i>Quercus palustris</i>	pin oak	S	FACW	4
<i>Quercus shumardii</i>	Shumard's oak	S	FACW	7
<i>Rubus discolor</i> *	Himalaya berry	S	UPL	-
<i>Rumex crispus</i> *	curly dock	H	FAC	-
<i>Salix nigra</i>	black willow	S	OBL	3
<i>Schoenoplectus mucronatus</i> *	pointed rush	H	OBL	-
<i>Scirpus atrovirens</i>	dark green rush	H	OBL	4
<i>Scirpus cyperinus</i>	wool grass	H	OBL	5
<i>Setaria glauca</i> *	pigeon grass	H	FAC	-
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Typha angustifolia</i> *	narrow-leaved cattail	H	OBL	-

*Non-native species Bold species is dominant in the denoted stratum

H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 3.0

FQI = 21.9

Site 3, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Juncus effusus var. solutus</i>	common rush	H	OBL	4
<i>Acer rubrum</i>	red maple	HS	FAC	5
<i>Agrostis gigantea</i>	red top	H	FACW	0
<i>Ambrosia artemisiifolia</i>	common ragweed	H	FACU	0
<i>Andropogon virginicus</i>	broom sedge	H	FACU	1
<i>Aster lanceolatus</i>	panicked aster	H	FAC	3
<i>Bidens aristosa</i>	swamp marigold	H	FACW	1
<i>Campsis radicans</i>	trumpet creeper	H	FACU	2
<i>Carex brachyglossa</i>	small yellow fox sedge	H	FACW	3
<i>Carya illinoensis</i>	pecan	S	FACW	6
<i>Dichanthelium acuminatum</i>	panic grass	H	FAC	0
<i>Dichanthelium clandestinum</i>	deer-tongue grass	H	FACW	4
<i>Diodia virginiana</i>	large buttonweed	H	FACW	4
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	H	FACW	3
<i>Fraxinus lanceolata</i>	green ash	H	FACW	2
<i>Ipomoea lacunosa</i>	small morning glory	H	FACW	1
<i>Iva annua</i>	marsh elder	H	FAC	0
<i>Juncus secundus</i>	side-flowering rush	H	FAC	6
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Panicum virgatum</i>	prairie switch grass	H	FAC	4
<i>Persicaria pensylvanica</i>	pinkweed	H	FACW	1
<i>Phragmites australis</i> *	common reed	H	FACW	-
<i>Prunella vulgaris var. elongata</i>	self-heal	H	FAC	1
<i>Quercus bicolor</i>	swamp white oak	S	FACW	7
<i>Setaria glauca</i> *	pigeon grass	H	FAC	-
<i>Solanum carolinense</i>	horse nettle	H	FACU	0
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Ulmus americana</i>	American elm	HS	FACW	5

*Non-native species Bold species is dominant in the denoted stratum
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 2.6
FQI = 13.1

Site 4, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Phragmites australis</i>*	common reed	H	FACW	-
<i>Acer rubrum</i>	red maple	H	FAC	5
<i>Andropogon virginicus</i>	broom sedge	H	FACU	1
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Aster lanceolatus</i>	panicled aster	H	FAC	3
<i>Bidens aristosa</i>	swamp marigold	H	FACW	1
<i>Calystegia sepium</i>	American bindweed	H	FAC	1
<i>Campsis radicans</i>	trumpet creeper	HS	FACU	2
<i>Erigeron annuus</i>	annual fleabane	H	FACU	1
<i>Fraxinus lanceolata</i>	green ash	HS	FACW	2
<i>Liquidambar styraciflua</i>	sweet gum	H	FACW	6
<i>Ludwigia polycarpa</i>	false loosestrife	H	OBL	5
<i>Panicum virgatum</i>	prairie switch grass	H	FAC	4
<i>Salix nigra</i>	black willow	S	OBL	3
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
*Non-native species Bold species is dominant in the denoted stratum			Mean C =	2.6
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine			FQI =	9.9

Site 5, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Panicum virgatum</i>	prairie switch grass	H	FAC	4
<i>Acalypha rhomboidea</i>	three-seeded mercury	H	FACU	0
<i>Ambrosia artemisiifolia</i>	common ragweed	H	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	H	FAC	0
<i>Andropogon virginicus</i>	broom sedge	H	FACU	1
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Barbarea vulgaris</i> *	winter cress	H	FAC	-
<i>Bidens aristosa</i>	swamp marigold	H	FACW	1
<i>Campsis radicans</i>	trumpet creeper	H	FACU	2
<i>Carex frankii</i>	bristly cattail sedge	H	OBL	4
<i>Carex tribuloides</i>	awl-fruited oval sedge	H	OBL	3
<i>Carya illinoensis</i>	pecan	HS	FACW	6
<i>Chamaesyce humistrata</i>	spreading spurge	H	FACW	1
<i>Cirsium discolor</i>	pasture thistle	H	FACU	3
<i>Conyza canadensis</i>	horseweed	H	FACU	0
<i>Dichanthelium acuminatum</i>	panic grass	H	FAC	0
<i>Dichanthelium clandestinum</i>	deer-tongue grass	H	FACW	4
<i>Diodia teres</i>	buttonweed	H	FACU	2
<i>Diodia virginiana</i>	large buttonweed	H	FACW	4
<i>Diospyros virginiana</i>	persimmon	HS	FAC	2
<i>Elaeagnus umbellata</i> *	autumn olive	S	UPL	-
<i>Eupatorium perfoliatum</i>	common boneset	H	OBL	4
<i>Eupatorium serotinum</i>	late boneset	H	FAC	1
<i>Festuca arundinacea</i> *	tall fescue	H	FACU	-
<i>Fraxinus lanceolata</i>	green ash	HS	FACW	2
<i>Ipomoea lacunosa</i>	small morning glory	H	FACW	1
<i>Iva annua</i>	marsh elder	H	FAC	0
<i>Juncus effusus</i> var. <i>solutus</i>	common rush	H	OBL	4
<i>Juncus secundus</i>	side-flowering rush	H	FAC	6
<i>Lespedeza cuneata</i> *	silky bush clover	H	UPL	-
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Monarda fistulosa</i>	wild bergamot	H	FACU	4
<i>Oxalis stricta</i>	common wood sorrel	H	FACU	0
<i>Paspalum laeve</i>	smooth lens grass	H	FACW	2
<i>Phragmites australis</i> *	common reed	H	FACW	-
<i>Phyla lanceolata</i>	fog fruit	H	OBL	1
<i>Prunella vulgaris</i> var. <i>elongata</i>	self-heal	H	FAC	1
<i>Pseudognaphalium obtusifolium</i>	old-field balsam	H	UPL	2
<i>Quercus bicolor</i>	swamp white oak	S	FACW	7
<i>Quercus palustris</i>	pin oak	HS	FACW	4
<i>Rubus discolor</i> *	Himalaya berry	S	UPL	-
<i>Rubus pensilvanicus</i>	Yankee blackberry	S	-	2
<i>Rumex crispus</i> *	curly dock	H	FAC	-
<i>Salix nigra</i>	black willow	HS	OBL	3
<i>Scirpus atrovirens</i>	dark green rush	H	OBL	4
<i>Setaria glauca</i> *	pigeon grass	H	FAC	-
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1

*Non-native species Bold species is dominant in the denoted stratum

H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 2.4

FQI = 15.0

Site 6, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Phragmites australis</i>*	common reed	H	FACW	-
<i>Typha angustifolia</i>*	narrow-leaved cattail	H	OBL	-
<i>Acer rubrum</i>	red maple	HS	FAC	5
<i>Ambrosia trifida</i>	giant ragweed	H	FAC	0
<i>Andropogon virginicus</i>	broom sedge	H	FACU	1
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Aster lanceolatus</i>	panicked aster	H	FAC	3
<i>Aster pilosus</i>	hairy aster	H	FACU	0
<i>Bidens aristosa</i>	swamp marigold	H	FACW	1
<i>Bidens frondosa</i>	common beggar's ticks	H	FACW	1
<i>Campsis radicans</i>	trumpet creeper	HW	FACU	2
<i>Carex frankii</i>	bristly cattail sedge	H	OBL	4
<i>Carex tribuloides</i>	awl-fruited oval sedge	H	OBL	3
<i>Carex vulpinoidea</i>	brown fox sedge	H	FACW	3
<i>Carya illinoensis</i>	pecan	S	FACW	6
<i>Celtis occidentalis</i>	hackberry	H	FAC	3
<i>Chamaesyce humistrata</i>	spreading spurge	H	FACW	1
<i>Conoclinium coelestinum</i>	mistflower	H	FACW	3
<i>Cyperus esculentus</i>	field nut sedge	H	FACW	0
<i>Cyperus pseudovegetus</i>	false green flat sedge	H	FACW	5
<i>Diodia virginiana</i>	large buttonweed	H	FACW	4
<i>Diospyros virginiana</i>	persimmon	HS	FAC	2
<i>Echinochloa muricata</i>	spiny barnyard grass	H	OBL	0
<i>Eleocharis ovata</i> var. <i>obtusa</i>	blunt spike rush	H	OBL	2
<i>Eupatorium perfoliatum</i>	common boneset	H	OBL	4
<i>Eupatorium serotinum</i>	late boneset	H	FAC	1
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	H	FACW	3
<i>Festuca arundinacea</i> *	tall fescue	H	FACU	-
<i>Fraxinus lanceolata</i>	green ash	HS	FACW	2
<i>Gleditsia triacanthos</i>	honey locust	S	FACU	2
<i>Iva annua</i>	marsh elder	H	FAC	0
<i>Juncus effusus</i> var. <i>solutus</i>	common rush	H	OBL	4
<i>Juncus interior</i>	inland rush	H	FAC	3
<i>Leersia oryzoides</i>	rice cut grass	H	OBL	3
<i>Liquidambar styraciflua</i>	sweet gum	H	FACW	6
<i>Ludwigia palustris</i> var. <i>americana</i>	marsh purslane	H	OBL	4
<i>Ludwigia polycarpa</i>	false loosestrife	H	OBL	5
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Lythrum alatum</i>	winged loosestrife	H	OBL	5
<i>Mimulus alatus</i>	winged monkey flower	H	OBL	6
<i>Panicum dichotomiflorum</i>	fall panicum	H	FACW	0
<i>Panicum virgatum</i>	prairie switch grass	H	FAC	4
<i>Paspalum floridanum</i>	giant bead grass	H	FACW	7
<i>Persicaria lapathifolia</i>	curttop lady's thumb	H	FACW	0
<i>Persicaria pensylvanica</i>	pinkweed	H	FACW	1
<i>Phyla lanceolata</i>	fog fruit	H	OBL	1
<i>Poa pratensis</i> *	Kentucky blue grass	H	FAC	-

Species list continued on next page

Site 6, 2012 -

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Populus deltoides</i>	eastern cottonwood	HS	FAC	2
<i>Prunella vulgaris</i> var. <i>elongata</i>	self-heal	H	FAC	1
<i>Pyrus calleryana</i> *	ornamental pear	S	UPL	-
<i>Ranunculus sceleratus</i>	cursed crowfoot	H	OBL	3
<i>Rumex crispus</i> *	curly dock	H	FAC	-
<i>Salix nigra</i>	black willow	S	OBL	3
<i>Scirpus atrovirens</i>	dark green rush	H	OBL	4
<i>Setaria faberi</i> *	giant foxtail	H	FACU	-
<i>Setaria glauca</i> *	pigeon grass	H	FAC	-
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Toxicodendron radicans</i>	poison ivy	H	FAC	1
<i>Trifolium repens</i> *	white clover	H	FACU	-
<i>Ulmus americana</i>	American elm	H	FACW	5
<i>Verbena hastata</i>	blue vervain	H	FACW	3
<i>Vernonia missurica</i>	Missouri ironweed	H	FAC	5
<i>Xanthium strumarium</i>	cocklebur	H	FAC	0

*Non-native species Bold species is dominant in the denoted stratum

H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 2.6

FQI = 19.5

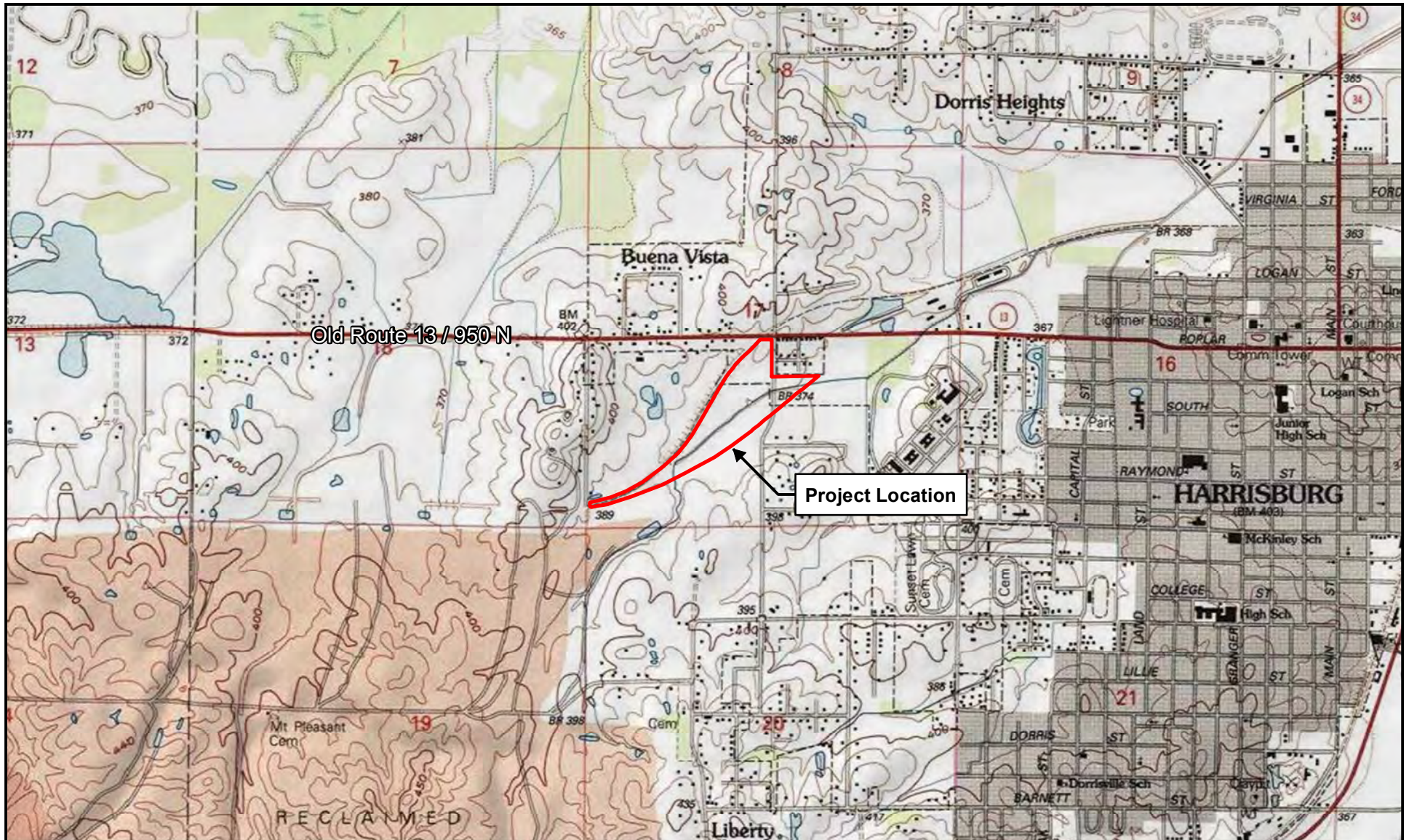
APPENDIX C

Figures

Figure 1 – Project Location Map

Figure 2 – Mitigation Monitoring Map

Figure 3 – ISGS 2012 Wetland Hydrology Map



University of Illinois at Urbana-Champaign



ILLINOIS NATURAL
HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 1
Project Location Map
: 5 D',) + (-@%) , Harrisburg Site &
Saline County

Seq. No: 90% F!*

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January 2013





University of Illinois at Urbana-Champaign



**ILLINOIS NATURAL
HISTORY SURVEY**
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 2
Mitigation Monitoring Map
IL 13 (FAP 332), Harrisburg Site
Saline County

Seq. No: 101BR-6

January 2012



0 Meters 100

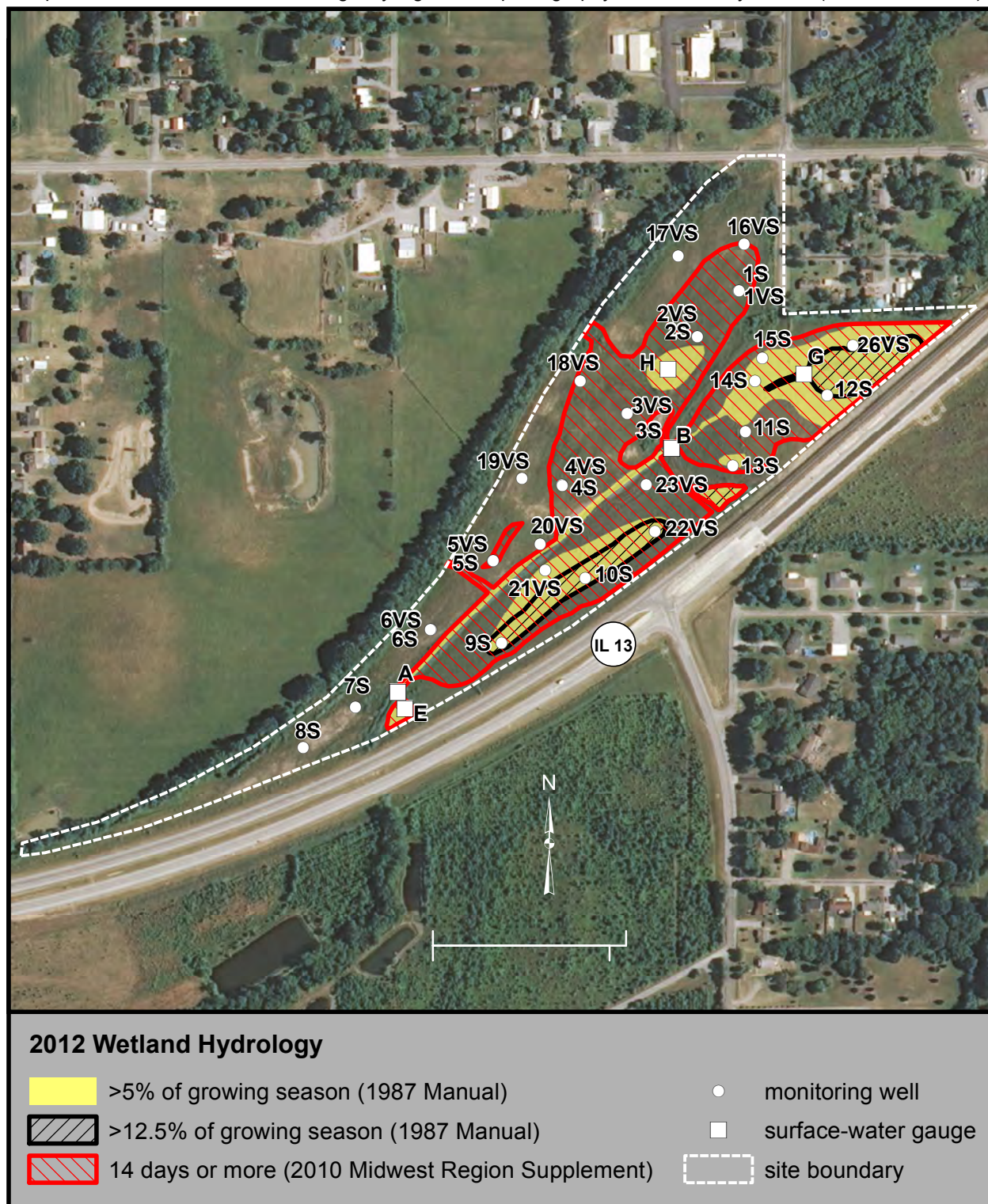
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Figure 3: Harrisburg, Site 2 Wetland Mitigation Site (IL 14, FAP 857)

Estimated Areal Extent of 2012 Wetland Hydrology

September 1, 2011 though August 31, 2012

Map based on 2012 Farm Service Agency digital orthophotography, Saline County, Illinois (USDA-FSA 2012)



APPENDIX D

Photographs of Wetland Mitigation Site



Photo 1. Facing northeast Site 1.



Photo 2. Facing northeast Site 2.



Photo 3. Facing north Site 3.



Photo 4. Facing south Site 4.



Photo 5. Facing southwest Site 5.



Photo 6. Facing west Site 6.



Photo 7. *Phragmites australis* bordering site on the northwest.